

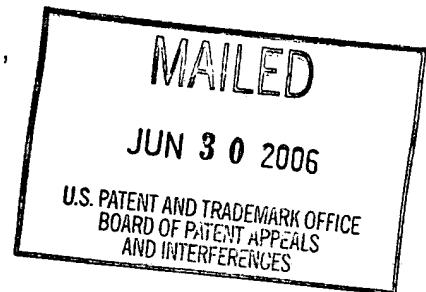
The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte HONG XUE, HUI KWOK MIN,
HONGYAN WANG and HUI ZHENG

Appeal No. 2006-0285
Application No. 09/909,862



ON BRIEF

Before MILLS, GRIMES, and GREEN, Administrative Patent Judges.

GREEN, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 13-16 and 19-22. Claim 19 is representative of the subject matter on appeal, and reads as follows:

19. A method of treating anxiety in a patient comprising administering an effective non-toxic dose of wogonin to the patient.

The examiner relies upon the following reference:

Cassels et al. (Cassels)

5,756,538

May 26, 1998

Claims 13-16 and 19-22 stand rejected under 35 USC § 103(a) as being obvious over Cassels. After careful review of the record and consideration of the issues before us, we reverse.

DISCUSSION

According to the Examiner's Answer:

Cassels [] teaches a method of treating anxiety comprising administering to the patient an effective non-toxic amount of substituted flavonoid, particularly substituted flavone, wherein the substituents may be hydroxyl group or low alkyl alkoxyl groups. Cassels particularly prefer flavone wherein the 5, and 7 positions have hydroxyl substituents. See, particularly, the claims. Note, [sic] chrysin, as claimed in claim 6 by Cassels [] is 5, 7-dihydroxyflavone.

Cassels [] does not teach expressly the employment of the flavone herein with R4 is a methoxy group[], [sic] i.e. 5, 7 dihydroxy, 8-methoxyflavone (wogonine).

However, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the invention was made, to treat anxiety by employing a flavone with hydroxyl groups at 5, and 7, and a methoxyl group at 8 position (R4 as depicted by Cassels). A person of ordinary skill in the art would have been motivated to treat anxiety by employing a flavone with hydroxyl groups at 5, and 7, and a methoxyl group at 8 position (R4 as depicted by Cassels) because Cassels expressly prefer flavone with 5 and 7 dihydroxyl groups. Further, methoxyl group is known to be useful as a substituent at 8 position (R4). The selection of methoxyl group herein is seen to be a selection from amongst equally suitable functional groups and as such obvious. Ex parte Winters, 11 USPQ2d 1387 (at 1388). . . .

It should be noted that the compound employed herein, wogonin, is an old and well-known compound found in herbs with very low toxicity. See pages2 [sic] in the specification.

Examiner's Answer, pages 3-4.

Appellants argue that there is no motivation to select the claimed species from the genus for Formula I disclosed by Cassels for the treatment of anxiety.

See Appeal Brief,¹ page 5. We agree, and the rejection is reversed.

The burden is on the examiner to set forth a prima facie case of obviousness. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598-99 (Fed. Cir. 1988). In order to make a prima facie case of obviousness based on the structural similarity between the claimed compound and the compound disclosed by the prior art, not only must the structural similarity exist, but the prior art must also provide reason or motivation to make the claimed compound.

See In re Dillon, 919 F. 2d 688, 692, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (en banc), In re Mayne, 104 F. 3d 1339, 1341, 41 USPQ2d 1451, 1454 (Fed. Cir. 1997); In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 256 (CCPA 1979).

Moreover, the prior art has to enable the ordinary artisan to make the claimed compound. See Payne, 606 F.2d at 314.

In the case at hand, Cassels teaches variants of Formula I in which “R¹, R², R³ and R⁴, R⁵ and R⁸ are independently selected from H, OH, R, NO₂, halo, OR, NH₂, NHR, NR₂, COOR, COOH, CN or a sugar group;” in which “R is a C₁₋₆ alkyl or alkenyl.” Id., Column 1, lines 45-63. One of the preferred compounds, as noted by the examiner, is chrysin, in which R¹ and R³ are OH.

¹ All references to the Appeal Brief are to the Amended Appeal Brief, files January 6, 2005, and stamped January 10, 2005.

The compound recited in the claims, wogonin, reads on Formula I, not only in which R¹ and R³ are OH, but R⁴ is OCH₃. Cassels teaches that preferred compounds are ones in which R¹, R³ and R⁵ are hydroxy; R¹ and R³ are hydroxy and R⁵ is halo; R³ is hydroxy and R¹ is hydrogen; R³ and R¹ are both hydroxy, R² and R⁴ are both halo, and more preferably R⁵ is OH or halo. See id. at Column 3, lines 20-26. The only compound that contains a methoxy group taught by Cassels is 5-hydroxy, 7-methoxyflavone (R¹ is OH and R³ is OCH₃), see id. at Column 10, Table II, which the reference teaches “show[s] weak benzodiazepine ligand behaviour,” see Column 9, lines 48-56.

Thus, we can find nothing in the Cassels reference that would lead one of ordinary skill in the art to use 5,7-dihydroxy, 8-methoxyflavone (wogonine) in the treatment of anxiety. The examiner relies on Ex Parte Winters, 11 USPQ2d 1387, 1388 (Bd. Pat. App. & Int. 1989), but that case states that “[g]enerally speaking, there is nothing unobvious in choosing ‘some’ among ‘many’ indiscriminately.” In the case before us, however, only one was chosen, and the prior art provides no motivation to make and use the claimed compound in the treatment of anxiety.

Moreover, appellants have provided evidence of the unpredictability of changing the substituents in Formula I of Cassels by supplying the Huen² reference, which the examiner summarily dismissed as being post filing date.

² Huen et al. (Huen), “5,7-Dihydroxy-6-methoxyflavone, a benzodiazepine site ligand isolated from Scutellaria baicalensis Georgi, with selective antagonistic properties,” *Biochemical Pharmacology*, Vol. 66, pp. 125-32 (2003).

Huen, however, merely demonstrates that 5,7-dihydroxy-6-methoxyflavone, a compound which falls within Formula I of Cassels (R¹ and R³ are OH, and R² is OCH₃), in which the methoxy group is meta to the position in the claimed compound, has no anxiolytic properties, and in fact abolishes the anxiolytic effects of diazepam. See Appeal Brief, page 7.

CONCLUSION

Because the examiner has not set forth a prima facie case of obviousness, the rejection of record is reversed.

REVERSED

Demetra J. Mills
Demetra J. Mills
Administrative Patent Judge

Eric Grimes
Eric Grimes
Administrative Patent Judge

Lora Green
Lora Green
Administrative Patent Judge

) BOARD OF PATENT
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